

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously presented) An injector comprising:
 - a housing that has an inner surface defining a bore; and
 - a filter that fits in the bore,
 - wherein the filter includes:
 - an inlet section which is fixed in the bore at a peripheral surface thereof;
 - a filter section integral with the inlet section and having a plurality of holes to filter fluid; and
 - a closed end section integral with the filter section, wherein:
 - the filter section is located between the inlet section and the closed end section,
 - the filter section defines a tubular fluid passage with the inner surface of the housing,
 - at every point along the length of the filter section the tubular fluid passage has a cross-sectional area that is equivalent to or smaller than a summation of cross-sectional areas of all of the holes of the filter section, so that fluid flow is regulated through the tubular fluid passage,
 - the inlet section defines an opening in an opposite end of the filter with respect to the closed end section,
 - fluid enters into the opening of the inlet section, passes through an inside of the filter section, passes through the plurality of holes, and flows through the tubular fluid passage toward a downstream of the tubular fluid passage, and
 - the closed end section is shaped so that a cross-sectional area between an outer surface of the closed end section and the inner surface of the housing increases gradually with respect to a fluid flow direction in the downstream of the tubular fluid passage.

2. (Previously presented) An injector apparatus according to claim 1, wherein the closed end section is approximately hemispherically-shaped, so that a diameter of the closed end section is decreased toward the fluid flow direction.

3. (Previously presented) An injector apparatus according to claim 1, wherein the closed end section is approximately conically-shaped, so that a diameter of the closed end section is decreased toward the fluid flow direction.

4. (Previously presented) An injector apparatus according to claim 1, wherein each of the holes is formed so that a diameter thereof is larger at a radially outer side of the filter section than at a radially inner side of the filter section.

5. (Previously presented) An injector apparatus according to claim 4, wherein each of the plurality of holes is tapered to have the diameter gradually increasing toward the outer side of the filter section.

6. (Previously presented) An injector apparatus according to claim 4, wherein each of the plurality of holes is stepped to have the diameter gradually increasing toward the outer side of the filter section.

7. (Previously presented) An injector apparatus according to claim 4, wherein the plurality of holes is shaped in different shapes.

8. (Previously presented) An injector apparatus according to claim 4, wherein each of said holes is shaped in two shapes, said two shapes being a combination of any two of an approximate hemisphere, a straight bore and a tapered bore.

Claim 9. (Canceled).

10. (Previously presented) An injector apparatus according to claim 1, wherein the closed end section has no hole to disable flow of the fluid in an axial direction.

11. (Previously presented) An injector comprising:
a housing that has an inner surface defining a bore therein; and
a filter that fits in the bore,
wherein the filter includes:
an inlet section fixed in the bore at a peripheral surface thereof;
a filter section integral with the inlet section and having a plurality of holes to filter fluid; and
a closed end section integral with the filter section, wherein:
the filter section is located between the inlet section and the closed end section,
the filter section defines a tubular fluid passage with the inner surface of the housing,
at every point along the length of the filter section the tubular fluid passage has a cross-sectional area that is equivalent to or smaller than a summation of cross-sectional areas of all of the holes of the filter section, so that fluid flow is regulated through the tubular fluid passage, fluid flows from an opening of the inlet section on an opposite side of the filter with respect to the closed end section, and flows into an inside of the filter section, and
the fluid flows from the inside of the filter section to the tubular fluid passage through the plurality of holes.

Claims 12-16. (Canceled)

17. (Previously presented) An injector apparatus according to claim 1, wherein the tubular fluid passage is located upstream of the closed end section with respect to fluid flow.

18. (Previously presented) An injector apparatus according to claim 1, wherein the cross-sectional area of the tubular fluid passage is substantially constant with respect to fluid flow.

19. (Previously presented) An injector apparatus according to claim 1, wherein the cross-sectional area of the tubular fluid passage is equivalent to or smaller than a summation of cross-sectional areas of the holes at a peripheral surface of the filter section.

20. (Previously presented) An injector apparatus according to claim 11, wherein the tubular fluid passage is located upstream of the closed end section with respect to fluid flow.

21. (Previously presented) An injector apparatus according to claim 11, wherein the cross-sectional area of the tubular fluid passage is substantially constant with respect to fluid flow.

22. (Previously presented) An injector apparatus according to claim 11, wherein the cross-sectional area of the tubular fluid passage is equivalent to or smaller than a summation of cross-sectional areas of the holes at a peripheral surface of the filter section.

23. (Previously presented) The injector according to claim 1, wherein each of the plurality of holes is in a substantially circular shape.

24. (Previously presented) The injector according to claim 1, wherein the plurality of holes are disposed along a substantially helical line on a peripheral surface of the filter section.

25. (Previously presented) The injector according to claim 24, wherein the plurality of holes are disposed at a substantially regular interval along the substantially helical line.

26. (Previously presented) The injector according to claim 11, wherein each of the plurality of holes is in a substantially circular shape.

27. (Previously presented) The injector according to claim 11, wherein the plurality of holes are disposed along a substantially helical line on a peripheral surface of the filter section.

28. (Previously presented) The injector according to claim 27, wherein the plurality of holes are disposed at a substantially regular interval along the substantially helical line.

29. (Previously presented) The injector according to claim 1, wherein at a point in a flow direction downstream of the most downstream one of the holes of the filter section the cross-sectional area of the tubular fluid passage is equivalent to or smaller than the summation of the cross-sectional areas of all of the holes of the filter section.

30. (Previously presented) The injector according to claim 11, wherein at a point in a flow direction downstream of the most downstream one of the holes of the filter section the cross-sectional area of the tubular fluid passage is equivalent to or smaller than the summation of the cross-sectional areas of all of the holes of the filter section.

Claims 31-34 (Canceled).

35. (New) An injector comprising:
a housing that has an inner surface defining a bore; and
a filter that fits in the bore,
wherein the filter includes:
an inlet section which is fixed in the bore at a peripheral surface thereof;
a filter section integral with the inlet section and having a plurality of holes to filter fluid; and
a closed end section integral with the filter section, wherein:
the filter section is located between the inlet section and the closed end section,
the filter section defines a tubular fluid passage with the inner surface of the housing,
at a point in a flow direction downstream of the most downstream one of a plurality of holes in the filter section the tubular fluid passage has a cross-sectional area that is equivalent to or smaller than a summation of the cross-sectional areas of all of the holes of the filter section, so that fluid flow is regulated through the tubular fluid passage,
the inlet section defines an opening in an opposite end of the filter with respect to the closed end section,
fluid enters into the opening of the inlet section, passes through an inside of the filter section, passes through the plurality of holes, and flows through the tubular fluid passage toward a downstream of the tubular fluid passage, and
the closed end section is shaped so that a cross-sectional area between an outer surface of the closed end section and the inner surface of the housing increases gradually with respect to a fluid flow direction in the downstream of the tubular fluid passage.

36. (New) The injector according to claim 35, wherein at every point along the length of the filter section the cross-sectional area of the tubular fluid passage is

equivalent to or smaller than the summation of cross-sectional areas of all of the holes of the filter section.

37. (New) An injector comprising:

a housing that has an inner surface defining a bore therein; and

a filter that fits in the bore,

wherein the filter includes:

an inlet section fixed in the bore at a peripheral surface thereof;

a filter section integral with the inlet section and having a plurality of holes to filter the fluid; and

a closed end section integral with the filter section, wherein:

the filter section is located between the inlet section and the closed end section,

the filter section defines a tubular fluid passage with the inner surface of the housing,

at a point in a flow direction downstream of the most downstream one of the holes of the filter section the tubular fluid passage has a cross-sectional area that is equivalent to or smaller than a summation of cross-sectional areas of all of the holes of the filter section, so that fluid flow is regulated through the tubular fluid passage, fluid flows from an opening of the inlet section on an opposite side of the filter with respect to the close end section, and flows into an inside of the filter section, and

the fluid flows from the inside of the filter section to the tubular fluid passage through the plurality of holes.

38. (New) The injector according to claim 37, wherein at every point along the length of the filter section the cross-sectional area of the tubular fluid passage is equivalent to or smaller than the summation of the cross-sectional areas of all of the holes of the filter section.